

SELF-PINNED SPIN VALVE SENSOR WITH STRESS MODIFICATION LAYERS  
FOR REDUCING THE LIKELIHOOD OF AMPLITUDE FLIP

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ABSTRACT OF THE DISCLOSURE

A spin valve (SV) sensor of the self-pinned type includes one or more compressive stress modification layers for reducing the likelihood that the pinning field will flip its direction. The spin valve sensor includes a capping layer formed over a spin valve structure which includes a free layer, an antiparallel (AP) self-pinned layer structure, and a spacer layer in between the free layer and the AP self-pinned layer structure. A compressive stress modification layer is formed above or below the capping layer, adjacent the AP self-pinned layer structure, or both. Preferably, the compressive stress modification layer is made of ruthenium (Ru) or other suitable material.

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